

BORDER ROAD ORGANISATION

DETAILED PROJECT REPORT

CONSTRUCTION OF 70 MTR SPAN STEEL SUPERSTRUCTURE (THROUGH TYPE) TOTA BRIDGE OVER KISHAN GANGA WITH APPROACHES AT KM 66.950 ON BANDIPUR-GUREIZ ROAD TO BE EXECUTED THROUGH CONTRACT UNDER 56RCC/32BRTF/PROJECT BEACON IN JAMMU & KASHMIR (UT)

1. EXECUTIVE SUMMARY

1.1 The road Bandipur-Gureiz was taken over by BRO from MES during the year 1971. The road was included in the BRDB Programme vide Sectt BRDB letter No. F-4(i)/BRDB/Proj/64 dated 19 Mar 1971 for its improvement to CI-5 specifications. The road was further included for improvement from CI-5 to CI-9 specifications vide Sectt BRDB letter No.F-4(I)/BRDB/PE/C/GSWE/MP dated 11 Mar 84 based on the requirement of Army. This road is presently being maintained under scale-I maintenance grant by 56RCC/32BRTF under Project Beacon.

1.2 The road Bandipur-Gureiz is life line for civil population living in Gureiz sector since this is the only road which connects Gureiz sector from Bandipur. This road is strategically important for Army as well civil population, due to the requirement for winter stocking and transportation of troops deployed in border areas beyond Gureiz.

1.3 Presently, a 42.672 mtr (140 ft) TSRBB of load classification 24R exists at Km 66.950 on Bandipur - Gureiz road. This bridge is causing inconvenience to smooth flow of traffic due to its less load classification, less width and shortage of span. Construction of a permanent bridge to replace the old vintage bridge at Km 66.950 on B-G road is necessary.

2. INTRODUCTION

2.1 **Proposal.** It is proposed to obtain the sanction of CFA for construction of 70 mtr span steel superstructure (through type) Tota Bridge over Kishan Ganga River with approaches at Km 66.950 on Road Bandipur-Gureiz.

2.1 **Necessity.** Considering the vital importance of the road, connectivity to Gureiz valley is required to be maintained up to the satisfaction of the road users, and the troops deployed in the forward sector, being a strategically important area, to provide proper connectivity of valley to main stream. The 42.672 mtr (140 ft) TSRBB of load classification 24R existing at Km 66.950 on Bandipur - Gureiz road is causing inconvenience to smooth flow of traffic due to its less load classification, less width and shortage of span. Thus construction of a permanent bridge to replace the old vintage bridge at Km 66.950 on B-G road is necessary and hence DPR for this Job is initiated.

2.3 **Authority and Plan Provision.** Draft Bridge Scheme for construction of 70 mtr span steel superstructure (through type) Tota bridge over Kishan Ganga River with approaches at Km 66.950 on Road Bandipur-Gureiz to replace the existing bridge has been received with Drawing No. B-1863/B&T Dte/BCN/2020 Sheet No 1R dated 25 Aug 2020 vide HQ DGBR letter No. 40805/Tota Bridge/BCN/BRO/25/B&T Dte dated 28 Aug 2020.

2.4. Essential formation, permanent and surfacing works for both side approaches have also been considered in this DPR being a permanent bridge. Case has already been initiated for inclusion of subject work in AWP BE 2020-21.

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3. **Scope of Work.** Depending on the site requirement/ conditions, following minimum essential works have been catered in this DPR:-

S/No	Items of work	A/U	Qty	Remarks
(a)	Constr of Pmt bridge (Through Contract)	Mtr	70	
(b)	Formation filling in embankment	Cum	650.20	
	Formation cutting in SMB	Cum	218.69	
(c)	Construction of Dawar side approach	Mtr	35	
(d)	Construction of Bandipur side approach	Mtr	78.45	
(e)	Constr of R/Wall 1.50 mtr height	Mtr	48	
(f)	Approach slab (4 mtr on either side)	Mtr	8	
(g)	Parapet wall	Nos	30	
(h)	Preparation of Sub Grade in SMB	Sqm	803.10	
(j)	GSB 15 cm thick	Sqm	1603.20	
(k)	CSB 7.50 Cm thick	Sqm	1573.00	
(l)	DBM 50 mm thick	Sqm	736.70	
(m)	BC 40 mm thick	Sqm	736.70	
(n)	Prime Coat	Sqm	736.70	
(o)	Tack Coat	Sqm	147.33	

4. **Mode of execution.** The construction of bridge proper has been proposed to be executed through execution contract. Case is being initiated for the same.

5. **Financial effect.** The cost of work as per DPR has been worked out to Rs. 970.98 Lacs.

6. **Miscellaneous.**

6.1 **Rates Adopted.** The present AE has been priced based on DGBR SSR 2016, Zone 'J', Altitude between 2101 to 2400 mtr for departmental works. Cost of bridge proper has been priced based on DGBR Bridge SSR 2019. Cost of proof checking of design & Drawing of bridge is incorporated in this AE as per HQ DGBR letter No. 44001/DGBR/HMK/Policy/ J&K Dte dated 16 Feb 2015.

6.2 **Road Lift Charges.** Road lift charges for all stores have been catered for as per DGBR letter No.F-63(21)/BRDB/90/P-II dated 22nd Apr 1993.

6.3 **Escalation Charges.** Escalation charges @ 15.44% has been catered for in this AE for the year 2020-21 as per HQ DGBR letter No. 33733/DGBR/SSR-16/29/D&S dated 02 Jul 2019.

6.4 **Physical Contingency Charges.** Provision of physical contingency charges has been made @ 5% as per Sectt BRDB letter No. F-62/Gen/Proj/CCC dated 08 Apr 1993.

6.5 **Quality Control Charges.** Quality Control Charges have been provisioned @ 1.0% in the AE as per SSR 2016.

6.6 **Royalty Charges.** Royalty charges for stone and sand to be collected departmentally have been considered as per the rates of J&K Mining Dept.

6.7 **Extra TPT Charges.** Transportation of materials required for construction works and Ready mix from Hot Mix plant to work site is not within the initial lead, hence extra tpt charges have been catered for these items in this estimate.

6.8 **Labour Cess Charges.** Provision of Labour Cess Charges has been catered for @ 1% as per HQ DGBR letter No 30204/DGBR/EC/172/WP Coord (T) dated 12 Jan 2011.

6.9 **Credit for GREF Tradesmen.** Credit for deployment of GREF Tradesmen in place of CP Tradesmen has been catered for in this AE as per General rule 9 of SSR 2016.

6.10 **Credit for Pioneers.** Credit for deployment of Pioneers in place of CPLs has been catered for in this AE as per HQ DGBR letter No. 33733/DGBR/SSR-2016/31/D&S dt 29 Jul 2019.

6.11 **Contract Provision.** The Bridge proper work is proposed to be executed through execution contract. Hence, contract provision for the same is made in this AE.

6.12 **Land Acquisition.** As per Office of the Sub Divisional Magistrate, Gureiz letter No. SDM/G/2020/830-31 dated 16 Oct 2020, no private/ revenue land is involved for the proposed bridge, however land is State Govt land under occupation of Forest Dept.

7. **Certificate.** It is Certified that:-

- a) All the quantities included in this Approximate Estimate are based on detailed calculation sheets and drawings.
- b) No lump sum provision has been made in this estimate.
- c) The works proposed in this estimate are essential and minimum inescapable requirement and the design thereof is adequate taking absolute technical necessity.
- d) The specifications proposed in this estimate are technically sound and essential.
- e) No portion of the work proposed in this AE is covered by any earlier AE sponsored/sanctioned.
- f) All arithmetical calculation have been checked and found correct.

8. **Recommendation.** Considering the necessity and importance of this road, the AE for subject work amounting to Rs 970.98 Lacs for construction of 70 mtr span steel superstructure (through type) Tota bridge over Kishan Ganga River with approaches at Km 66.950 on Road Bandipur-Gureiz is recommended for sanction of Competent Authority at the earliest please.

Station: C/o 56 APO

Dated: 29 Oct 2020


(Brijesh BN)

Major
Officer Commanding

DETAILED PROJECT REPORT

PART-I

Name of State : Jammu and Kashmir

Name of Unit/Project : 56 RCC/32 BRTF/Beacon

Zone - 'J'

Alt: Between 2101-2400 Mtr.

NAME OF WORKS:- CONSTRUCTION OF 70 MTR SINGLE SPAN MAJOR PMT BRIDGE (TOTAL BRIDGE) WITH STEEL SUPERSTRUCTURE (THROUGH TYPE) AT KM 66.950 OVER KISHAN GANGA RIVER ON ROAD BANDIPUR -GUREIZ UNDER PROJECT BEACON IN J&K (UT)

S/No	Description	Pmt Bridge (Rs.)	Approach road			Total (Rs)
			Fmn work (Rs.)	Pmt work (Rs.)	Surf work (Rs.)	
A	Work Assessed as per SSR 2016					
1	Cost of works:--					
2	Road Lift Charges	82180000.00	263507.00	888628.00	1864388.00	85196523.00
3	Extra TPT Charges	0.00	3748.00	236042.00	130779.00	370569.00
4	Credit for GP Tradesmen	0.00	-	32485.00	105990.00	138475.00
5	Credit for PNR	0.00	-2159.00	-35214.00	-16901.00	-54274.00
6	Cost of Proof Checking@ 3%	0.00	-16763.00	-26094.00	-27678.00	-70535.00
7	Deduct cost of bridge as per bridge SSR 2019	2465400.00	0.00	0.00	0.00	2465400.00
	Total (A)	-82180000.00	0.00	0.00	0.00	-82180000.00
B	Add Escalation Charges	2465400.00	248333.00	1095847.00	2056578.00	5866158.00
1	Add escalation charges @ 15.44% for 2020-21,	0.00	38343.00	169199.00	317536.00	525078.00
	Total (B)	0.00	38343.00	169199.00	317536.00	525078.00
	Total (A) + (B)	2465400.00	286676.00	1265046.00	2374114.00	6391236.00
C	Add Following charges on (A + B)					
1	Quality Control Charges @ 1.0%	0.00	2867.00	12650.00	23741.00	39258.00
2	Physical Contingencies Charges @ 5%	0.00	14334.00	63252.00	118706.00	196292.00
3	Labour Cess Charges @ 1%	0.00	2867.00	12650.00	23741.00	39258.00
	Total (C)	0.00	20068.00	88552.00	166188.00	274808.00
D	Royalty Charges	0.00	0.00	9988.00	24340.00	34328.00
	Total (D)	0.00	0.00	9988.00	24340.00	34328.00
E	Cost of Contract					
	Contract cost execution of bridge	82180000.00	0.00	0.00	0.00	82180000.00
	Quality Control Charges @ 1.0%	8218000.00	0.00	0.00	0.00	8218000.00
	Total E	90398000.00	0.00	0.00	0.00	90398000.00
	G/Total (A to E)	92863400.00	306744.00	1363586.00	2564642.00	97098372.00
	Say in Lacs	928.63	3.07	13.64	25.65	970.98

(Brijesh BN)

Major

Officer Commanding

DETAILED PROJECT REPORT

Part-II

Zone -'J'

Alt:2101-2400 mtr

Name of Area/State :- JAMMU & KASHMIR

Name of Project :- 56 RCC/32 BRTF/BEACON

NAME OF WORKS:- CONSTRUCTION OF 70 MTR SINGLE SPAN MAJOR PMT BRIDGE (TOTA BRIDGE) WITH STEEL SUPERSTRUCTURE (THROUGH TYPE) AT KM 66.950 OVER KISHAN GANGA RIVER ON ROAD BANDIPUR -GUREIZ UNDER PROJECT BEACON IN J&K (UT)

RIVER ON ROAD BANDH ON				A/U	ZONE-'J'			Remarks
S/ No	Name of Work	SSR 2016 Item No.	Brief Discription of Works		Alt: Between 2101-2400 Mtr.			
					Qty	Rate (RS)	Amount (RS)	
(A) BRIDGE PROPER								
(i)	Bidge Proper	BR SSR 2019	70 m span steel superstructure through type bridge	Mtr	70.00	1174000.00	82180000.00	
(B) FORMATION WORKS								
1		F 702	Earthwork in embankment including excavation of earth and filling with earth free from roots etc, spreading in layers not exceeding 30 cm including watering rolling and finishing to required slope & level not exceeding 1.5 m above the base in plain areaand for approaches to bridge in ordinary soil excluding cost of soil. (By manual means)	Cum	650.20	353.37	229761.00	
2		F 401	Rough excavation in soil/soil mixed with small boulders,getting out and disposing all excavated material lead upto 3 m and upto 1.5 m deep(75% machine and 25 % by manual labour)	Cum	218.69	154.31	33746.00	
					</			

Sl/No	Name of Work	SSR 2016 Item No.	Brief Discription of Works	A/U	ZONE/J			Remarks
					Alt. Between 2101-2400 Mtr.			
					Qty	Rate (RS)	Amount (RS)	
			Credit for PNR					
			Extra TPT Charges				-26094.00	
			Road Lift Charges				32485.00	
			Royalty Charges				236042.00	
							9988.00	
(D) SURFACING WORKS								
1		S 101	Preparation of sub grade in SMB by excavating upto 20 cm average depth, dressing excavated earth to required camber or super elevation and consolidating with power roller incl disposal of surplus earth within a lead of 30m.	10 Sqm	80.31	465.39	37378.00	
2		S 109	GSB 15 Cms thick (compacted) with natural sand, gravel or any material as per Table-400-1 of MORT&H Specifications for road and bridge works including supply of material, spreading in layers watering and compaction all complete.	10 Sqm	160.62	3889.15	624687.00	
4		S 810	Providing crushed stone aggregate (CSB) 75 mm , depositing on a prepared surface by hauling vehicles, spreading and mixing with a motor grader, watering and compacting with a vibratory roller to clause 410 of MoSRT&H specifications to form a layer of sub-base/base.	10 Sqm	157.30	2493.64	392250.00	
5		S 511	Providing and laying 50 mm thick DBM layer, precoated stone aggregate physical requirements/grading/mix composition requirement as per table- 500-8/9/10 respectively of MORT&H specifications for road and bridge works with 4.25% asphalt VG-10 penetration grade as per MoSRT&H data book and rolled to the required specification.	10 Sqm	73.67	5193.17	382557.00	
6		S 513	Providing and laying 40 mm thick Bituminous Concrete on Dense Bituminous Macadam layer with pre coated stone chips grading confirming to Table :500-17 and mix satisfying the requirement of table 500-16 of MORT&H specifications, mixed with 5% binder asphalt VG-10 penetration grade by weight of total mix and 2% cement by weight of mix (for filler) all as specified as per MoSRT&H data book.	10 Sqm	73.67	4744.03	349471.00	
7		S 809	Providing and applying primer coat with bitumen emulsion on prepared surface of granuler base.	10 Sqm	73.67	726.68	53531.00	
8		S 814	Providing and applying Tack coat with bitumen emulsion using emulsion pressure distributor @ 2.5 kg/10 sqm on prepared bituminous/granular surface cleaned with mechanical broom,all complete as perclause 503 of MoSRT&H specifications	10 Sqm	147.33	166.40	24516.00	
			Total (Surf Works)				1864388.00	
			Credit for GP Tradesmen				-16901.00	
			Credit for PNR				-27678.00	
			Road lift charges				130779.00	
			Extra TPT Charges				105990.00	
			Royalty Charges				24340.00	


 (Signature)
 Major
 Officer Commanding